POPULATION TODAY

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FROM THE EDITOR'S DESK

The "Demographer's Page" on page 6 of this *PT* features a thoughtful essay by Michael Teitelbaum on demography's newest issue, the prospect of population decline in the more developed countries. This trend has advanced farthest in Europe, as described in PRB's *Bulletin* for March, "Europe's Second Demographic Transition" (see page 5).

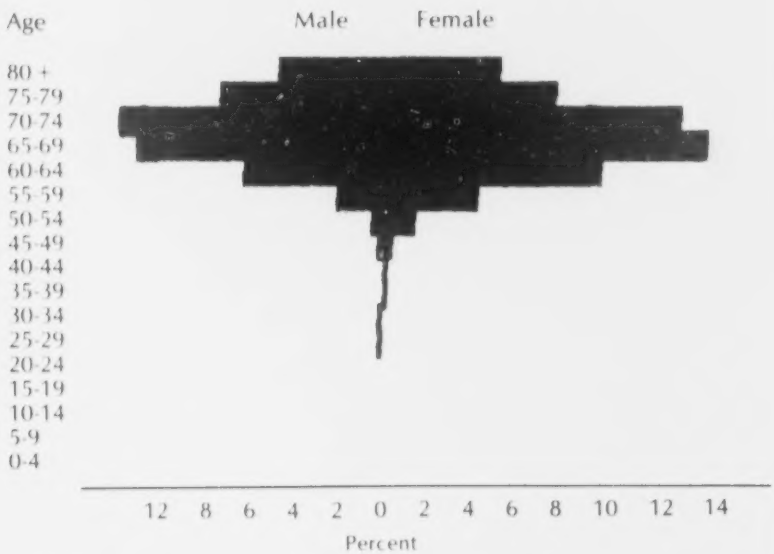
Reaction to the eventuality of population decline has been predictably varied and somewhat confused. Based on telephone calls received at PRB, however, the subject may at least serve to widen public understanding of what "replacement level" fertility is all about. Perhaps the day will come when we can use the term "total fertility rate" in an article without having to explain it.

But if anything seems clear from the increasing public curiosity, it's that the matter is not going to go away. As more and more European countries put minus signs in front of their growth rates, more and more people will notice. Perceptions of the whole question of population growth will change and interest heighten – without, we hope, the whole thing degenerating into a round of "we-they" rhetoric. Perhaps the fastest way to raise consciousness of the concept of "doubling time" may be an understanding of "halving time."

– Carl Haub

SPEAKING GRAPHICALLY

Sun City, Arizona



Pyramid? The above population age-sex structure, based on 1980 data, is an example of what shapes can be produced on a personal computer with the program "Population Pyramids" (see Softwhere, page 9; the type was, however, set by our typesetter). You can call it a pyramid out of courtesy, but Sun City's profile has more in common with a twister about to set down in *The Wizard of Oz*.

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Human Resources Under Arms

In 1986, China's armed forces – the world's largest, with 4.1 million men – took steps to cut manpower by 1 million.

This move does not signal the arrival of a suddenly safe world – not in a time of large-scale wars in the Persian Gulf and Afghanistan, and most recently, substantial buildups of tensions and troops on the Pakistan-India border. Rather, China's unilateral demobilization is another major domestic reform encouraged by Vice Premier Deng Xiaoping to modernize the world's most massive government.

The reduction in force draws attention to the sometimes tenuous relationship between population and military strength. While cutting its military, Beijing is endeavoring not to weaken national defense, but to make it more efficient. And interestingly, during the past decade available figures suggest that in the world as a whole, the military may have declined as a proportion of population.

Year	Armed forces (figures in millions)	World pop.	Armed forces personnel per 1,000 pop.
1974	26.9	3,992	6.7
1975	26.0	4,082	6.4
1976	26.2	4,158	6.3
1977	26.1	4,230	6.2
1978	26.5	4,303	6.2
1979	26.9	4,376	6.1
1980	27.0	4,463	6.0
1981	27.9	4,541	6.1
1982	28.3	4,589	6.2
1983	28.4	4,667	6.1

Source: 1985 *World Military Expenditures*, U.S. Arms Control and Disarmament Agency. Figures do not include reserves.

Peace has not exactly broken out, of course; during the same 10-year period, when world military population was going up by 6 percent and world population as a whole was rising by about 19 percent, world military expenditures were mushrooming by 38 percent, as measured in constant 1982 dollars.

The Top Ten armed forces, by population, as of 1983 (does not include reserves):

Country	No. in armed forces	Armed forces personnel per 1,000 pop.
China	4,100,000	4.0
USSR	3,800,000	14.0
U.S.	2,222,000	9.5
Vietnam	1,221,000	21.4
India	1,120,000	1.5
Turkey	824,000	16.8
No. Korea	784,000	41.3
So. Korea	622,000	15.2
France	578,000	10.5
Italy	498,000	8.9

Source: Ruth Leger Sivard, *World Military and Social Expenditures 1986* and *PRB World Population Data Sheet*.

These are peacetime forces (with the partial exceptions of the USSR and Vietnam, which are engaged in limited wars abroad) and could be boosted in a national emergency with reserves and universal conscription. In the meantime, many of them have important national peacetime tasks (public works, road building, etc.) which account for their size as much as the possibility of national threats.

> The tenuous relationship between population and military strength

When all is said and done, the reason for the decade-long dip in armed forces per 1,000 population may be that 28 million soldiers worldwide are sufficient to cope with international tensions, whatever the future level of global population. The magnitude of military "populations" may no longer be as closely linked to the concept of total strength as in the past (see page 4).

The Big Two

The major powers, after all, place great reliance on technological and productive prowess (both dependent upon gigantic expenditures of funds) in order to maintain strategic parity. Had the two mightiest superpowers maintained their World War II proportion of armed forces to population, the U.S. would now have 20 million in uniform, while the USSR's forces stood at 18 million.* Instead, these two countries make do with just over 2 million (the U.S.) and nearly 4 million (the USSR).

Maintaining the 3.8-million-person Soviet Army requires well over 1 million draftees every year for two years of universal military service. Wartime and domestic upheavals, however, have altered Soviet age structure so that the cohort of 18-year-old males in 1985 (born 1968) was estimated to be 2.1 million – half a million *smaller* than the 18-year-old male cohort in 1979 (born 1961), which was 2.6 million, so that the vast majority of the cohort would have to be drafted.

This demographic trend may have bottomed out and started to rebound. Even so, the U.S. Census Bureau, which prepared these estimates, projects that the Soviet 18-year-old male cohort of 2000 (born 1982) will number only 2.5 million, still fewer than the 18-year-olds of 1979.**

Since conscripting most young Soviet men who turn 18 each year could have disruptive effects on the needs of the civilian labor market, the

Continued on next page

*Although less involved in World War II than the invaded USSR, the U.S. at peak strength had a slightly greater proportion of its population in uniform.

**According to the Census Bureau, during the 1970s, ethnic Russians ceased to be a majority in the 15-19-year-old birth cohorts; the 1979 estimate: 47 percent.

Military

Continued from preceding page

USSR may be forced to turn to three-year terms of service. In 1985, conscription rules were changed to allow the drafting of women into the military for specialized tasks, but in what numbers this has actually occurred is unknown.

In the U.S., the 18-year-old male cohorts have also been shrinking as a result of the baby bust that began in the mid-1960s. The 1985 18-year-old cohort consisted of 1.8 million men, 16 percent fewer than the 1979 cohort of 2.2 million. Although not as drastic as the Soviet case, the U.S. demographic constraints, and dependence on an all-volunteer force, mean providing inducements for young people to enlist.

In 1970, during the Vietnam conflict, the U.S. had 3 million active duty personnel worldwide. By 1975, its armed forces had shrunk to 2.1 million, and they have remained at about this level ever since, with the armed forces per 1,000 population declining from 9.9 in 1975 to 9.0 in 1984.

Even with troop strength holding steady, defense outlays during the same period nevertheless still rose about 30 percent in constant dollars.

The threat of nuclear holocaust has loomed as a major new factor in the military-strength equation. Although the two greatest conventional powers also started the nuclear "club" following World War II, the threat of these weapons has to some extent made military power independent of population size. Population and economic clout are only militarily important factors insofar as they can be deployed; the nuclear trump card makes it difficult and risky to utilize these factors to their full potential.*

*It has been pointed out that in 1871, the U.S. launched a punitive expedition against Korea after that nation had seized a U.S. ship. When North Korea seized the *U.S.S. Pueblo* in 1968, the U.S. decided that the benefits of punitive action were not worth the risk – even a slight risk – of escalation into superpower confrontation.

The Ranks of LDCs

Of the worlds' roughly 28 million soldiers, over 17 million are in the less developed countries (LDCs). These nations' armed forces have somewhat lower manpower levels than the more developed countries (MDCs): 4.9 under arms per 1,000 population, compared to 9.8, as of 1983.

Notwithstanding these manpower differences, Ruth Sivard, in her annual compendium of world military costs,** calculates that military budgets consume about the same proportion of national GNP for both LDCs and MDCs: about 5.5 percent.

What has all this money bought? The purpose of armed forces is assumed to be protection and peacekeeping. Since 1945, according to Sivard's tally, 120 wars (inter- or intranational military

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**Ruth Leger Sivard, *World Military and Social Expenditures 1986*. Washington, D.C.: World Priorities, Inc., 1986.

A Brief History of Military Populations

Common sense suggests that army strength is proportional to size; other factors being equal, bigger should be better.

For most of history when populations were relatively small, so were armies. Alexander the Great's forces numbered 30,000 to 40,000. William the Conqueror invaded England with 50,000 men and during the wars of the 16th and 17th centuries, even massive armies usually numbered only in the tens of thousands. But in the 18th century, as modern nation-states arose, patriotism, universal conscription, and more centralized national authority enabled governments to raise armies of greater and greater size – notably the army of the new French republic, which in 1794 fielded a gigantic conscript army of 800,000 (out of a population approaching 29 million) – the largest military force Europe had ever seen.

As national populations grew, technological advances such as railroads enabled larger numbers of soldiers to function as cohesive wholes over broader geographic areas, organized into regiments, divisions, or corps of divisions. Armies also became more specialized (in Ancient Greece, Alexander didn't require locomotive repair crews or meteorology staffs). An extreme example of military growth: Just prior to the Civil War, the United States's standing army stood at 15,000. By the end of the Civil War, the Union side had 1 million men under arms and the Confederacy, 900,000.

During World War I, military forces expanded to hitherto unimaginable levels. Some 65 million troops were mobilized 1914-1918, and about 19 million soldiers and civilians were killed – the bloodiest war in history up to that time. In the postwar period, President Woodrow Wilson proposed that the League of Nations covenant forbid conscription; however, nothing came of this scheme for preventing full-scale war.

The numbers were even higher for World War II: total armed forces of close to 100 million; an estimated 38 million soldiers and civilians killed.

World War II was the historic high point of using manpower and economic production to conduct a war. (During both World Wars, 3 or 4 percent of the world's population was in uniform at some time or other.) The world's two most populous developed countries – transcontinental powers both – also possessed the world's largest armies. The USSR's Red Army had a peak strength of 12.5 million men under arms; the U.S., 12.3 million.

In the period immediately following World War II, U.S. forces sank to a peacetime level of 1.5 million (though soon to resurge to 3.6 million during the Korean conflict). The Soviet Army declined to 3 million. The building of nuclear strategic forces began, and the rest is history.

Europe's Second Demographic Transition

"The only reasonable expectation is that Europe – at least most of it – will inevitably see birth and death rates converge at low levels, followed by population decline."

That is the conclusion of Dutch demographer Dirk J. van de Kaa in PRB's *Bulletin* for March, "Europe's Second Demographic Transition." Van de Kaa is former director of the Netherlands Interuniversity Demographic Institute, president of the European Association for Population Studies, and professor of demography at Amsterdam University.

At the peak of the postwar baby boom in 1965 – the year van de Kaa terms "The Great Divide" – fertility stood well above 2.5 births per woman in Northern, Western, and Southern European countries. By 1985 the rates in all but Albania, Malta, Ireland, and Turkey were well below the replacement level of 2.1 and as low as 1.29 in West Germany. Eastern European rates were under 2.5 in 1965, rose in response to restrictions on legal abortion and pronatalist economic incentives, but are now also all below replacement level except in Poland.

Austria, Denmark, Hungary, and West Germany have already slipped into natural population decrease (fewer births than deaths), van de Kaa reports. Teetering on the brink are Belgium, Bulgaria, East Germany, Italy, Sweden, Switzerland, and the United Kingdom.

Current UN medium projections show Europe's population (minus the USSR) inching up only 6 percent between 1985 and 2025, from 492 to 524 million, while world population nearly doubles, from 4.5 to 8.2 billion. In 2025 nearly one in five Europeans will be pensioners aged 65 and over, with a shrinking working-age population to support them. Even these projections assume a rise in Europe's fertility to replacement level by 2020-2025, van de Kaa points out, a prospect he considers unlikely, though a slight rise in rates from 1983 to 1985 in Denmark (1.38 to 1.45 births per woman) and Sweden (1.61 to 1.73) suggests "the low point might have been reached."

He sees the fertility plunge as a reflection of a dramatic shift in norms that started in northwestern Europe and is now gaining momentum elsewhere. The fertility drop during Europe's first demographic transition from 7 or 8 children per woman in the 1880s to 2 or 3 in the 1930s was propelled by "a concern for family and offspring." Now a tide of individualism, progressiveness, and "postmaterialism" is moving Europeans away from marriage and parenthood, he says. In Northern and Western Europe, cohabitation is increasingly accepted as "normal" and indications are that possibly as few as 50 to 60 percent of men and women in future generations will ever marry. Having a child is now more and more a deliberate choice made to achieve greater individual "self-fulfillment," with little fear that the child will be stigmatized if born out of wedlock.

Some countries are further along in the transition, van de Kaa observes. Proportions of out-of-wedlock births vary from 0.6 percent in Malta and 1.6 percent in Greece to 45 and 46 percent in Iceland, Denmark, and Sweden. In the latter three countries, the mean age of women at first marriage is now higher than women's mean age at first birth.

Many Europeans are sure below-replacement fertility and aging populations spell the end of national influence in regional and world affairs and collapse of social security funds, van de Kaa observes. France has stepped up pronatalist economic incentives and launched campaigns to "Ouvrons la France aux enfants." In the Netherlands, however, "a large majority shares the official view that an end to natural population growth should be welcomed."

Pronatalist economic incentives are seen as politically risky and costly, with no guarantee of success. Even using such incentives, Eastern European governments have not managed to boost fertility back up to replacement level despite incentive packages that include subsidized maternity leave up to three years in Hungary and allowances amounting to 53 percent of average monthly wages for a three-child family in Czechoslovakia.

Relying on immigration as a solution is "practically out of the question," van de Kaa says. All destination countries have now imposed strict controls, tried to stimulate return migration of guest workers recruited in the 1960s and early 1970s, and aim at rapid integration of current minorities.

The only hope lies with new, "more imaginative" measures to stimulate fertility, says van de Kaa. He cites U.S. demographer Paul Demeny's proposal

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"I am a sociocultural phenomenon," bewails this French baby in a pronatalist ad

DEMOGRAPHER'S PAGE

The Fear of Population Decline

by Michael S. Teitelbaum

The following Demographer's Page is adapted from Teitelbaum's address at the Population Reference Bureau Awards Dinner, Oct. 23, 1986. Teitelbaum is the co-author, with Jay M. Winter, of *The Fear of Population Decline* (Orlando, Fla.: Academic Press).

Ladies and gentlemen, my topic today – past and current fears about population decline – may seem a little perverse to some of you. After all, there have now been fully two decades of active scientific debate about rapid population *growth*.

In fact, scientific and unscientific discussion of population decline not only has a long and distinguished history, but concern about this issue has emerged in recent years – in Western Europe, Canada, and even the U.S. I expect that if fertility continues low, such concerns will grow; indeed, Ben Wattenberg of the American Enterprise Institute has forthrightly announced a concerted campaign to sound the alarm that low fertility will threaten the power of NATO vis à vis the Warsaw Pact – a classic repeat of the "strategic demography" that prevailed in France between the Franco-Prussian and First World Wars.

Confusion and Other Phenomena

In the short time available, I want to present for your consideration four points that can be learned from past debates about current and forthcoming alarms regarding population decline.

1. There is confusion about the very meaning of "population decline." Consider the diverse meanings given to these two simple words in past and current debates:

- a decline in the aggregate size of a population;
- a decline in the crude rate of population growth;
- a decline in natural increase or in the crude rate of natural increase;
- a decline in the crude birth rate;
- a decline in total or age-specific fertility rates;
- a decline in the net reproduction rate or the intrinsic rate of natural increase;
- a decline in the net reproduction rate or intrinsic rate of natural increase to levels below replacement;
- a decline in desired or expected family size among young couples;
- a decline in the proportion of young people and an increase in the proportion of old people in a population, or an aging of the population;
- a decline in subjectively defined attributes of a society with a growing population, e.g., declines in innovation, mobility, risk-taking, and optimism, and an increase in subjectively defined attributes of an aging population, e.g., conservatism, immobility, risk-aversion, and pessimism.

> Concerns about population decline are entangled in political and social questions

Unhappily, few writers on population decline have bothered to identify to which of these levels their thoughts have been directed.

2. Political ideologies and cultural values have loomed large in discussions of population decline. Population decline is not seen as simply fewer "warm bodies," but instead is visualized through the lenses of sociocultural values.

Otherwise, how could there have been any concern about population decline in the post-war period? During the past four decades, the world's population has increased by some 2.3 billion, or over 90 percent (up to 1985). Future trends show global population increasing by another 3.3 billion, or nearly 70 percent by the year 2025.

To put it crudely, since the onset of mortality declines two centuries ago, there have been no shortages of humans, only perceived shortages of particular kinds of humans (e.g., regional or national groupings, or subnational groups defined culturally). Because of such perceptions, concerns about population decline have always been, and continue to be, deeply entangled in most of the major political and social questions of the past century.

To cite one example, the French premier Jacques Chirac can simultaneously decry the prospective decline in the population of France *and* urge the repatriation of Arab immigrants and the restriction of further immigration. Also in France, nationalists on the right have used population decline arguments to justify French imperial expansion, and to explain the economic and military decline of France during the 19th century (forgetting, of course, other factors such as the French Revolution, the Terror, the rise of Napoleon, the Napoleonic Wars, and so on).

Meanwhile, the political left often has shared these nationalistic and strategic concerns. Consider that in the 1930s explicitly pronatalist policies were embraced by Adolph Hitler and by Joseph Stalin. Consider also that today, socialist states include not only the most strenuously antinatalist (China), but also the most blatantly pronatalist (Romania). In the West, the left has concentrated upon the threat posed by population decline to their desires to expand and strengthen the welfare state.

3. Demographic methods, and some prominent demographers, have played central roles in discussions of population decline. Development of demographic concepts such as the intrinsic rate of increase, the net reproduction rate, and the total fertility rate, coupled with the methods of demographic projection, led to the last bout of alarms about population decline, during the 1930s. There were open predictions that the population of the United Kingdom and France would be far smaller in the 1950s than in the 1930s.

In some respects, these flawed predictions arose from misunderstanding by the demographers of the day. In their enthusiasm for these new and powerful con-

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Michael S. Teitelbaum is a program officer at the Alfred P. Sloan Foundation

cepts and methods, some believed that the period net reproduction rates or intrinsic rates were direct reflections of cohort fertility behavior, and that demographic projections provided robust population predictions.

Although we know better now, it is ironic that exactly the same mistakes are being made at this very moment by non-demographers who have begun to sound the alarm about future population declines in the West.

4. The future course of fertility is no less murky today than it was in the 1930s. We all may have our opinions, but none of us can actually know whether fertility at current levels represents:

- a temporary pause on a continuing downward trendline;
- the "bottom" of a long decline;
- or some sort of rough equilibrium level of fertility in a postindustrial society.

Ironically, now that 90 percent of U.S. women have developed the capacity for rational control over their fertility, we demographers are experiencing increasing difficulty in rationally anticipating the aggregate outcomes of such rational individual behavior.

Few of us believe there will be another massive baby boom of the 1947-1965 variety (although I think I'm right in saying that no demographers anticipated that either), in which total fertility rates would rise from about 1.8 to over 3.5. But how many of us could conceive of total fertility rising to 2.0 or 2.2, or declining to 1.4? And how constrained are our expectations by experiences of only 10-15 years?

"Birth Dearth" Options

If it is decided, after informed and nonalarmist scrutiny, that a national birth dearth is something to be concerned about, Western nations appear to have four policy responses:

1. Limit access to fertility control methods. Such policies have been adopted in Eastern Europe, especially in Romania. While such measures may have significant effects upon fertility, their costs are high in terms of infringement upon personal freedom and increases in unwanted fertility and its unattractive consequences. In the liberal democracies of the West, it is possible that access to abortion may be restricted, but draconian limits upon access to all effective fertility control measures seem politically unlikely.

2. Encourage higher fertility with economic incentives. These include positive incentives favoring additional births (such as birth bonuses, child allowances, preferential housing for large families, tax incentives, early retirement, etc.), and negative incentives aimed at diminishing existing opportunity costs or otherwise discouraging additional childbearing (these benign measures include provision of cheap child care services; harsh policies might include measures to deter female labor force participation).

> Population growth was described by the U.S. as "a neutral phenomenon . . . not necessarily good or ill"

One interesting example of an economic incentive policy that combines both positive and negative aspects has been proposed in France: the payment of a so-called "maternal wage" to mothers who stay at home to raise children, calculated at one-quarter the prevailing wage for employed women.

3. Increase immigration. This seems obvious, until one remembers that the fear of population decline is not about the number of warm bodies, but about numbers defined as part of the national or other grouping of interest.

In this respect, large immigration in a setting of low or negative natural increase can lead to very rapid transformations in the socially defined composition of a population.

Historically, such rapid changes have almost invariably resulted in passionate public opposition, driven by fears that seem to be more powerful even than those about population decline. In contrast, slower rates of change can be accompanied by gradual changes in the relevant social definitions, thereby facilitating public acceptance of immigration.

Based upon past experience, large-scale immigration into a setting of low or negative natural increase seems unlikely to be politically viable unless the immigrant streams are socially perceived as "part of" or "similar to" the indigenous population. Examples include the postwar migrations of East Germans to West Germany or of Italians to Argentina.

4. Live with it. Measures can be taken to help a society adapt to declining and aging populations over the long term. In the past, these have included:

- modifying the terms of social security provision, e.g., by raising the legal age of retirement for pension purposes, or by subjecting the social security benefits of well-off retirees to income taxation. (While the potential power of relatively modest changes in social security provisions is quite surprising, the history of social security since World War II mostly has been one of liberalizing benefits and of reductions in the legal age of retirement.)
- converting surplus age-related public facilities such as schools to other social purposes, and designing new facilities so they can similarly be converted when changing demographic profiles require.

Perhaps the best we can say about these measures is that there has not yet been sufficient experience with contraction (as compared to expansion) of such facilities, and hence there is much to be learned before sensible advice based upon past experience can be offered.

A Word About Rhetoric

A final prediction: The subject of demographic change has already suffered through a decade-long bout of exaggerated rhetoric, in which some extreme proponents attributed much of the world's ills to what was called the "population bomb," the "population crisis," and so on. Although rapid population growth is a legitimate matter for reasoned concern and action, these alarmist doomsday

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Demographers Page

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scenarios were frequently criticized by leading demographers as exaggerated.

Coming next will be alarmist talk and writing about the profound dangers of population decline. Much of this will come from politicians and ideologues of the Right and Left, and will be permeated by highly emotional language analogous to that used by the population-explosion alarmists of the 1960s and 1970s.

I am not attempting for a moment to minimize legitimate concerns about sustained low fertility. Sustained and substantial population declines, should they emerge, deserve serious scholarly attention. They are potentially as significant in policy terms as are the sustained rapid demographic growth rates of some Third World countries. (Ironically enough, population growth was described as "of itself, a neutral phenomenon ... not necessarily good or ill" in the policy statement propounded by the U.S. delegation to the 1984 International Conference on Population in Mexico City.)

Nevertheless, we should expect to hear as much inflated rhetoric about low fertility as we have already heard about high fertility. For a taste of what may lie before us, consider the following statement made in 1984 by Prime Minister Chirac, leading candidate for the French presidency in the upcoming 1988 election.

> Two dangers stalk French society: social democratization and a demographic slump. ... If you look at Europe and then at other continents, the comparison is terrifying. In demographic terms, Europe is vanishing. Twenty years or so from now, our countries will be empty, and no matter what our technological strength, we shall be incapable of putting it to use.

Such language is almost exactly that used by the depopulation alarmists of the 1930s. It is not based in factual evidence and fails to recognize both the slowness and momentum of demographic change, and our continuing incapacity to predict future changes in fertility.

Any summary advice I could offer was put far more lucidly by Mark Twain. In Twain's words: "Get your facts straight first, and then you can distort them as much as you wish." □

SURVEY REPORT

Brazil

Brazil's fertility is steadily declining, and may be falling even faster than many had assumed, according to preliminary results of the 1986 National Survey of Maternal Child Health and Family Planning, the first such survey on a national level.

Specialists are surprised by the total fertility rate reported by all Brazilian women aged 15 to 44: 3.1 lifetime births per woman, a decline of about 1 child per family just since 1980. Traditionally, the government has been pronatalist, viewing population increase as a spur to further economic growth and development of its sparsely populated frontier areas. Yet even without any real government-supported family planning effort, fertility has declined. However, with death rates also falling, the population continued to grow over 2 percent annually. In 1987, Brazil, with about the same land area as the U.S., has just over 140 million inhabitants.

Regional surveys conducted from 1978 to 1982 revealed that contraceptive use for married women 15-44 years old ranged from 66 percent in Sao Paulo, Brazil's economic hub, to only 37 percent in the less developed Northeastern region. The 1986 survey gives a national rate for the first time: 65 percent of the currently married women (including those in consensual unions) used contraceptives.

While regional differences persisted, use rates have increased, and the relative gap between Sao Paulo and the Northeast has narrowed. These two regions showed 1986 contraceptive use rates of 73 and 53 percent, respectively. At the national level, contraceptive use was higher in urban than rural areas, and among more educated women.

About 80 percent of the women using family planning had either been sterilized (42 percent) or used oral contraceptives (38 percent). Another 14 percent of users were about equally divided between the use of natural family planning and withdrawal, while 6 percent chose another method.

Over 90 percent of oral contraceptive and condom users obtained them from private pharmacies, underscoring the minimal role of organized family planning programs in supplying contraceptives. However, over one-half of the sterilized women had their operations in government-subsidized hospitals. In the Northeast, almost 40 percent of the contraceptors relied on a publicly supported source of family planning. Although a small percentage of all Brazilian women rely on subsidized family planning, they are from the poorest regions.

Despite the very high use of contraceptives, 45 percent of the Brazilian women who had been pregnant in the past five years reported that their last pregnancy had been mistimed or unwanted. But increases in contraceptive use may improve this percentage: in 1986, 82 percent of the women who wanted no more children and 72 percent of those who wanted to delay their next pregnancy were practicing contraception.

The 1986 survey also collected important data on prenatal health care, breastfeeding, and immunization. Women from Rio de Janeiro, Sao Paulo, and other more prosperous regions were more likely to have had prenatal care and to have had children immunized, but they were less likely to be breastfeeding their babies. For Brazil as a whole, 74 percent of the women with a birth since 1981 had received prenatal care, and about 80 percent gave birth in hospital or clinic.

—M.K.

Military

Continued from page 4

conflicts producing 1,000 deaths or more) have taken place, with a total loss of life of over 18 million.

Out of 120 armed conflicts, only one – the Hungarian revolution of 1956 – took place in an MDC. The other 119 occurred in the LDCs, although in a number of cases MDCs were deeply involved.

The more developed nations make up 24 percent of global population. How these countries have generally managed to avoid war on their soil during the past four decades is open to many interpretations. But a persuasive reason might be that in the nuclear age one war is perceived as more than enough.

The 10 most lethal conflicts since 1945.

Conflict	No. deaths
Korean war (1950-1953)	2,889,000
Peak of Indochina War (1965-1975)	2,058,000
Cambodia	2,000,000
Nigeria civil war (1967-1970)	2,000,000
Bangladesh (1971) Pakistani attack on Bengalis	1,500,000
China (1946-1951) civil war	1,000,000
China (1951-1952) govt executes landlords	1,000,000
India (1946-1948) Hindus vs. Muslims	800,000
Vietnam (1945-1954) war of independence	600,000
Iran-Iraq war (1982-1986)	600,000

Source: Sivard.
Figures include war-caused famine.

The two largest wars – in Korea and Indochina – are well known because of the part they played in the Cold War between the West and the Soviet Union. The great majority of post-World War II conflicts have no such claim to fame. They have not been geopolitically "important" – only tragic and deadly, like all war. *– A.H.*

SOFTWHERE

Population Pyramids is a demographic graphics program written for the IBM PC. Developed at the University of Wisconsin – Madison, it is menu driven and consists of two parts. The first part is an educational module with six subparts, explaining the dynamics of how age and sex affect a population.

The second part of the program allows the user to create his or her own pyramids. (Each pyramid is limited to no more than 21 age intervals.) Data are entered directly into the program by the user and can be saved and recalled later. Printing is done by a screen dump (Crtl-PrtSC).

printers with IBM graphics emulation are recommended.

The program is not capable of multiple overlays but can be very useful for analyzing the age-sex structure of a population at a glance – in the case of Sun City, Ariz., an astonished glance (see Speaking Graphically, page 2).

Pyramids was created by Bob Israel, Doris Slesinger, Peter Ubomba-Jaswa, and Karl Taeuber. For further information and prices, contact: Applied Population Laboratory and Center for Demography and Ecology, University of Wisconsin, 1180 Drive, Madison, Wis. 53706.

POPULATION UPDATE

Estimated United States Population:

As of October 1, 1986	242,115,000
As of October 1, 1985	239,929,000

The above estimates include armed forces overseas and are from U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 996.

Estimated World Population:

As of March 1987	4,998,000,000
Annual growth	83,000,000

Estimated by extrapolation of the mid-1986 population given on PRB's 1986 World Population Data Sheet.

Latest Provisional Statistics for the U.S.: October 1986

	12 months ending with October					
	Number		Rate			
Item	1986	1985	1986	1985	1984	1983
Live births	3,718,000	3,752,000	15.5	15.8	15.6	15.7
Deaths	2,097,000	2,087,000	8.7	8.8	8.6	8.6
Natural increase	1,621,000	1,665,000	6.8	7.0	7.0	7.1
Marriages	2,390,000	2,438,000	9.9	10.2	10.5	10.5
Divorces	1,179,000	1,187,000	4.9	5.0	4.9	5.1
Infant deaths	39,200	39,300	10.6	10.5	10.6	11.0
Population base (in millions)			240.6	237.9	235.8	233.4

Note: Rates are given per 1,000 population, except for infant deaths, which are given per 1,000 live births. Rates are based on revised population estimates from the 1980 Census.

Source: Monthly Vital Statistics Report (Vol. 35, No. 10) from the National Center for Health Statistics.

Globescope

Aiming to increase public understanding of long-term global trends, Globescope '87 meets in Cleveland, Ohio, April 29-May 2, 1987.

The conference, a project of the Global Tomorrow Coalition, seeks to inform concerned citizens about the state of the global environment, examine the interrelationships between long-term trends involving population, resources, the environment, and development and help participants become active in shaping the world's future.

Globescope accomplishes this by bringing together people of diverse backgrounds from the U.S. and other countries. At the four-day conference, they will participate in an exchange of information, ideas, and action plans.

This is the fourth Globescope event sponsored by the Global Tomorrow Coalition, a nonprofit alliance of over 100 independent, nongovernmental organizations representing more than 6 million members. Global Tomorrow's stated goal is to help the world achieve a sustainable future.

For registration information, contact Globescope '87, Global Tomorrow Coalition, 1325 G St. N.W., Washington, D.C. 20005 (202) 628-4016.

Europe

Continued from page 5

to "relink fertility behavior and economic security in old age" by earmarking part of an individual worker's social security taxes to go directly to his or her own live parents as an extra pension entitlement. Van de Kaa admits this idea has little chance of being adopted but adds: "In demographic matters, the unexpected sometimes happens."

— *J.vdT.*

PRB members will receive their copies of van de Kaa's report, "Europe's Second Demographic Transition," in a special mailing later in March. Other copies of the *Bulletin* (Vol. 42, No. 1) may be ordered from the Population Reference Bureau, Inc., Circulation Dept., P.O. Box 96152, Washington, D.C. 20090-6152, with checks payable to PRB. Prices are: $4.00 per single copy, 2-10 copies, $3.00 each, 11-50 copies, $2.50 each, over 50, $2.00 each. Orders for $50 or less must be prepaid and include $1.00 for postage and handling.

TAKE A NUMBER

Bevölkerungsentwicklung: or population situation, for those taken aback by German nouns. A recent edition of the German statistical monthly, *Wirtschaft und Statistik*, gives some interesting insights into recent West German demography. For one, the fertility of the non-German population, while higher than that of native Germans, is a good deal lower than one might think. Germans had a total fertility rate (TFR) of 1.36 lifetime births per woman in 1976 while the non-German TFR stood at 2.57. But by 1984, when the TFR for native Germans stood at 1.26, the non-German TFR had dropped to 1.69, a remarkably quick convergence. The report notes that births are classified by the mother's ethnic origins and that there is probably some undercount in the births to non-German women because some women return to their home country to have their babies.

Here and there ... Iceland reported a statistical anomaly for 1985: a sex ratio at birth below 100. In 1985, there were 1,904 male and 1,952 female births for a sex ratio of 97.5 male births per 100 female births. Since Iceland's population produces a relatively small number of annual births, such fluctuation is obviously possible. Still, such a find tends to jolt us a bit when we are out hunting and gathering data ... due to falling emigration, the United Kingdom has for now become a country of immigration on balance, the drop in emigration is largely due to decreased numbers of U.K. citizens leaving for Old Commonwealth countries (Australia, Canada, and New Zealand) ... the Census Bureau reported that the U.S.'s preschool population (under age 5) is at its highest level since 1967 and increased by 1.7 million from 1980 to 1985. Utah has the highest proportion with 11.8 percent of the population ... Colombia reports from its 1985 Census that the population growth rate has slowed to 1.8 percent per year in the intercensal period 1973-1985; this rate is considerably lower than that estimated by others.

ADDENDA

"Type that up, make ten thousand copies, and send them to all the important people in the world."

Drawing by S. Harris, ©1985 The New Yorker Magazine, Inc.

CURRENT READINGS

PRB welcomes materials on population topics for possible inclusion in Current Readings. Publishers may address review copies to Book Review Editor, POPULATION TODAY, Population Reference Bureau, 777 14th St., N.W., Washington, D.C. 20005.

ATLAS OF AMERICAN WOMEN, by Barbara Gimlas Shortridge. New York: Macmillan, 1986. 164 pages. $85.00. ISBN 0-02-929120-8.

Women outnumber men in the U.S. by 120,446,000 to 115,236,000 as of 1984. Women who work full-time in rural Hawaii make 70 cents for every dollar earned by males. In Wyoming, at the other end of the spectrum, their earnings are 50 cents. Some 4.4 percent of the female population of Maryland are separated (the national high), compared to the 0.9 percent of females in North Dakota (the low).

That's just a sampling of the lively information provided by this attractive volume, which depicts American women in text and graphics according to a wide variety of measures. Topics range from demographics, labor force participation, earnings and income, occupation, and education to sports, relationships, pregnancy, health, crime, and politics.

Along with many virtues are a number of minor flaws and inconsistencies (for example, a number of typographical errors and an inconsistent definition of "brains"—itself a curious category title—which in one table is women of 15 years or over who have four or more years of college, but in a map, women 25 years and over with five or more years of college). Consequently, the user should read closely and compare captions and definitions before making comparisons between chapters.

Although none of the information is exactly new (the data are predominantly from 1980, reflecting the fact that the majority of comparative state statistics can be found only in decennial censuses), this compilation and its insights provide a most useful resource for assessing American women. For example, Map 7.11, which depicts the geographic distribution of the feminization of poverty, is accompanied by reasoned discussion that questions the accuracy of this "convenient catchword" and reviews the basis for defining poverty level status and its implications for state variations across the country.

A total of 128 shaded national maps illustrate the narrative, which is also supplemented by figures and tables. Because this work was compiled primarily from census and vital statistics data, it makes a fine illustrative and geographic companion to *Women in Transition* (reviewed in *PT*, November 1986) which uses similar types of data to review the demographic and social changes affecting U.S. women during the past 20 years.

Whatever flaws it may have, the uniqueness and overall quality of this Atlas earn it a place within any collection of the most recent analyses of American women.

-- Denise Molajo

TEENAGE PREGNANCY IN INDUSTRIALIZED COUNTRIES, by Elise F. Jones et al. New Haven, Conn.: Yale University Press, 1986. 310 pages. $30.00. ISBN 0-300-03705-6.

When the startling results of the Alan Guttmacher study on teenage pregnancy were made public in March 1985, they were widely publicized and commented on in the media. Now this volume, documenting the methodology and analysis of data from the U.S. and 36 other more developed countries (MDCs) has finally been published. It shows in more detail why teenagers from the most populous country in the Western industrialized world manage to get pregnant more frequently than those in most other MDCs, and at an increasing rate.

The international perspective not only teaches us something about the other 36 countries discussed (especially the six in-depth country case studies), but compels American policymakers and social commentators to revise some of the conventional wisdom about the causes of teen pregnancy.

One myth exposed by the study is that U.S. teenage pregnancy is largely a "black" problem. The study's comparisons show that while birth rates among black teenagers are much higher than among whites, U.S. white teenagers have among the highest rates of the countries studied. Why do U.S. teens become pregnant (and have abortions) more than Europeans and other MDC teenagers? Not because they are more sexually active than the others, but because the Americans use birth control less often.

The aim of the authors was to reveal the social, economic, or demographic variables which explain the differences in teen sexual behavior among industrialized countries. Quantifying variables such as social attitudes about sex is a difficult task, and one of the values of the book is the discussion of how these and other measures were developed.

The primary value of the study, however, lies in the policy implications of the findings. Based on the experiences of other countries, openness about sex and better availability of contraceptives to young people seem generally the most direct route to lowering teenage pregnancy.

– Mary Kent

Books Received

AFRICA SOUTH OF THE SAHARA 1987 (16th ed.). by Europa Publications Ltd. London. Europa (distributed in U.S. by Gale Research, Detroit, Mich.), 1986. 1,141 pages. $145.00.

CHINA ECONOMIC HANDBOOK (1st ed.), edited by Karsten Grummitt. London. Euromonitor (distributed in U.S. by Gale Research, Detroit, Mich.), 1986. 246 pages. $80.00.

MEDICINE & AMERICAN GROWTH 1800-1860 by James H. Cassedy. Madison, Wis.: University of Wisconsin Press, 1986. 298 pages.

REPORT OF THE SECRETARY'S TASK FORCE ON BLACK AND MINORITY HEALTH by U.S. Dept. of Health and Human Services. Washington, D.C.: HHS, 1986.
Vol. III: *Cancer*. 272 pages.
Vol. VIII: *Hispanic Health Inventory Survey*. 397 pages.

RESTORING THE EARTH: How Americans Are Working to Renew Our Damaged Environment, by John J. Berger. New York: Knopf, 1986. 241 pages. $18.95.

STATISTICAL YEARBOOK, 1983/84, 34th issue, by Dept. of International Economic and Social Affairs, Statistical Office. New York: United Nations, 1986. 1,137 pages. $70.00.

SUSTAINABLE NUTRITION SECURITY FOR AFRICA: Lessons from India, by M. S. Swaminathan. San Francisco, Calif.: The Hunger Project, 1986. 35 pages. (The Hunger Project Papers, No. 5, October 1986)

SPOTLIGHT

HAITI

Population (mid-1986 est.): 5.9 million
Land area: 10,714 sq. miles
Births per 1,000 pop.: 36
Deaths per 1,000 pop.: 13
Rate of natural increase: 2.3 percent
Total fertility rate: 5.5
Infant mortality rate: 108 infant deaths per 1,000 live births
Life expectancy at birth: 53 years
GNP per capita (1983 est.) US$290
Capital: Port-au-Prince

by Wendy Patriquin

Among the most economically disadvantaged countries in the world, and certainly the poorest in the Western Hemisphere, the Republic of Haiti's existence has been characterized by struggle.

The country occupies the western third of the Caribbean island of Hispaniola. While the terrain is predominantly mountainous, the climate is warm and semiarid, and only about one-third of the land is arable. (Haiti is an Indian term meaning "Land of Mountains.")

French is the official language, though it is the mother tongue of only about 10 percent of the population; the majority of Haitians speak Creole (a mixture of African dialects, French, Spanish, and a little English and Portuguese). Haiti is the only major Latin American nation whose cultural ancestry is principally French.

It is also the only Latin American republic in which the majority of the people (approximately 95 percent) are of African descent. This group constitutes the working class of Haitians, while the small aristocracy is composed of a mixture of French and African ancestry. Haiti's ethnic composition is the major reason for its unfriendly relations with its neighbor, the Dominican Republic, where one-quarter of the population is white and two-thirds is of mixed Spanish and black descent. In addition, GNP per capita in the Dominican Republic is about three times that of Haiti.

One of the richest French colonies in the 17th century, Haiti was the second nation in the hemisphere to gain independence (1804); the first was the U.S. Since then, Haiti has been ruled by a series of unstable regimes, except for a period of U.S. occupation from 1915 to 1934. Dr. Francois Duvalier was elected president in 1957, and in 1964, made himself "President for Life." When he died in 1971, his son Jean-Claude took power.

Under the reign of the Duvaliers, Haiti has experienced severe poverty, tension, and repression. One result of this was an exodus of some 20,000 undocumented immigrants to the U.S. in 1980. This continued until the U.S. Immigration and Naturalization Service (INS) was given the authority to intercept boats transporting immigrants. Ultimately, Haiti's poverty and oppression became unendurable, and in February 1986, after much political unrest and rioting, the government fell and ex-President for Life Jean-Claude Duvalier fled to France.

Most Haitians live in great poverty. Because of their race, culture, and lack of skills, they are not welcome to seek work in other Latin American countries.

Industry employs only about 7 percent of the labor force and contributes about 20 percent of the GDP. Companies, mostly American, are attracted to Haiti because of the availability of cheap labor and the lack of unions to protect workers. Agriculture, including forestry and fishing, employs more than 65 percent of the labor force. The chief crops for domestic consumption are beans, sugar cane, corn, bananas, and rice. Coffee and sugar each account for 10 percent of Haitian exports. Haiti has some of the richest bauxite deposits in the West Indies; however, they are underexploited. Tourism is a major source of foreign exchange and an important sector of the economy.

Although Haiti's rate of natural increase is 2.3 percent, emigration has been significant in recent years, and there is currently no policy to modify population growth. There is, however, a policy to decrease fertility, mainly for the purpose of strengthening maternal and child health. To this end there is direct government support for providing family planning commodities, information, and education. In an effort to stem urban growth, the government is encouraging the development of the agricultural sector and decentralizing the industrial infrastructure. Moderate emigration is encouraged, as remittances to families back home from workers abroad contribute a significant amount to Haitian coffers.

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